



LEOPARD
IMAGING

LI-OX08D-MIPI-120H



Address:

910 Auburn Ct
Fremont, CA 94538
USA



Phone:

+1 (408)263-0988

Fax:

+1 (408)217-1960



Sales:

sales@leopardimaging.com

Support:

support@leopardimaging.com

INTRODUCTION

The LI-OX08D-MIPI-120H is a MIPI CSI-2 stack camera equipped with OmniVision 1/1.73" RGGG CMOS 8MP HDR image sensor OX08D10. This camera outputs RAW image data.

KEY FEATURES

Sensor	OmniVision 1/1.73" RGGG CMOS 8MP HDR image sensor OX08D10
Optical Format	1/1.73"
Color / Mono	Color sensor
Resolution	3840 (H) x 2160 (V) (active pixels)
Pixel Size	2.1 μm x 2.1 μm
HDR (High Dynamic Range)	Supported
LED flicker mitigation (LFM)	Supported
Output Formats	Uncompressed 24-bit, HDR3, and 20 / 16 / 14 / 12-bit (PWL) combined HDR (4 captures)
Maximum Frame Rate	45 fps @ 3840 (H) x 2160 (V)
Interface	4-lane MIPI CSI-2
Power Consumption	TBD
Operating Temp	TBD
Storage Temp	TBD
Weight	~ 36 g
Ingress Protection	IP40

APPLICATIONS

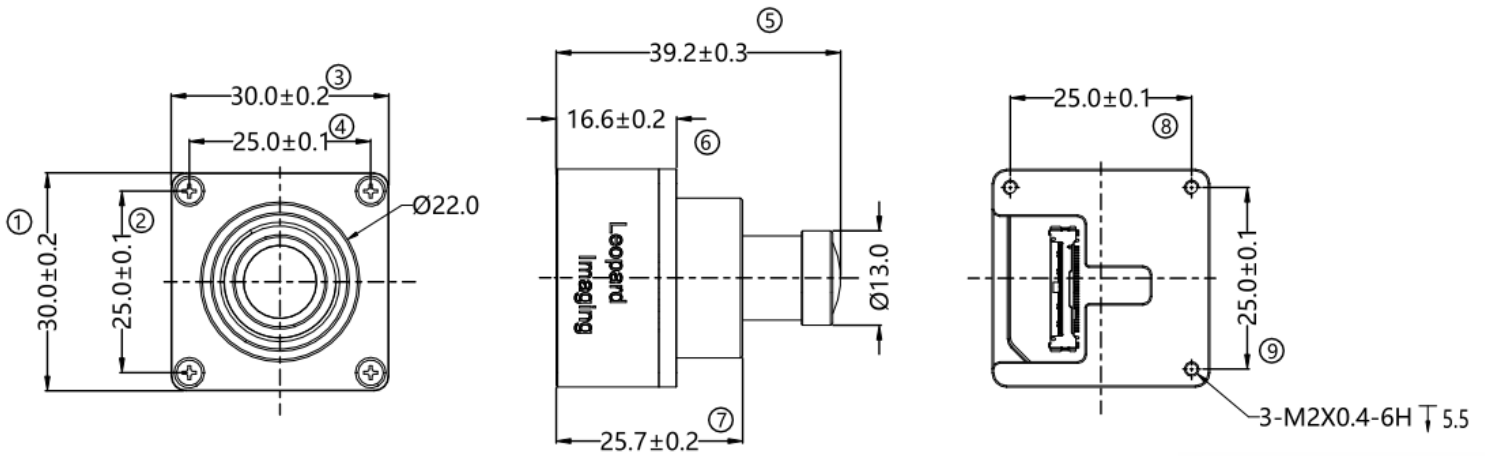
- FA Cameras
- ITS Cameras
- IoT
- Robots

LENS SPECIFICATIONS

Effective Focal Length	5.1 $\pm$ 2% mm
Aperture, F/#	1.6 $\pm$ 5 %
Field of View (FOV)	120° horizontal
Lens Mount	M16 x P0.5
IR Cut Filter	T=50% @ 700 $\pm$ 10 nm
	T=50% @ 410 $\pm$ 10 nm



DIMENSIONS



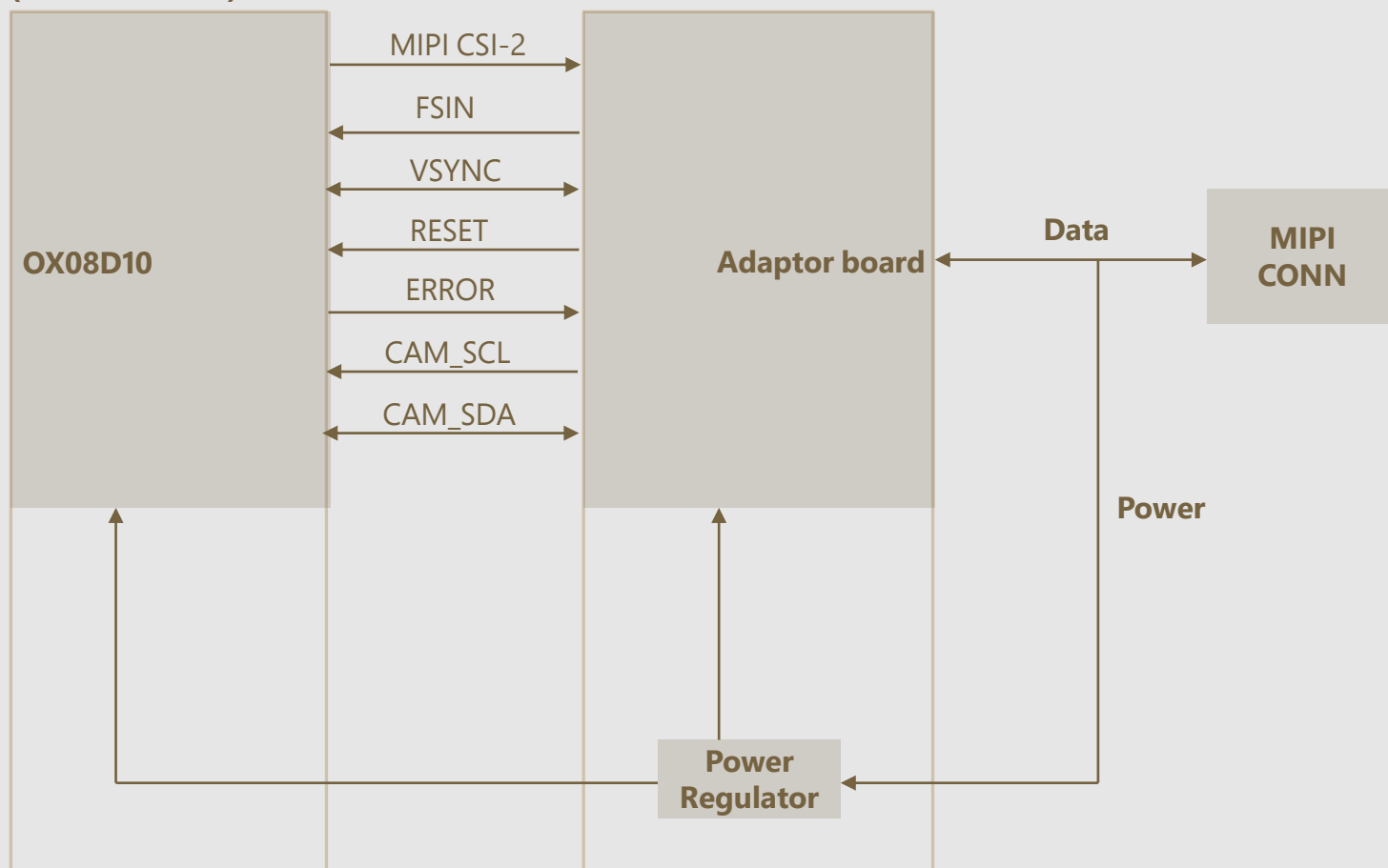
NOTE:

- ⊗ marked are important sizes.
- Tolerances for others unmarked refer to the tolerance table.
- Unit: mm

TOLERANCE TABLE					
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
0.5 < X ≤ 3	±0.1	0.5 < X ≤ 3	±0.2	X ≤ 10	±1°
3 < X ≤ 6	±0.1	3 < X ≤ 6	±0.5	10 < X ≤ 50	±30'
6 < X ≤ 30	±0.2	6 < X ≤ 30	±1	50 < X ≤ 120	±20'
30 < X ≤ 120	±0.3	X > 30	±2	120 < X ≤ 400	±10'
120 < X ≤ 400	±0.5			X > 400	±5'
400 < X ≤ 1000	±0.8				
X > 1000	±1.2				

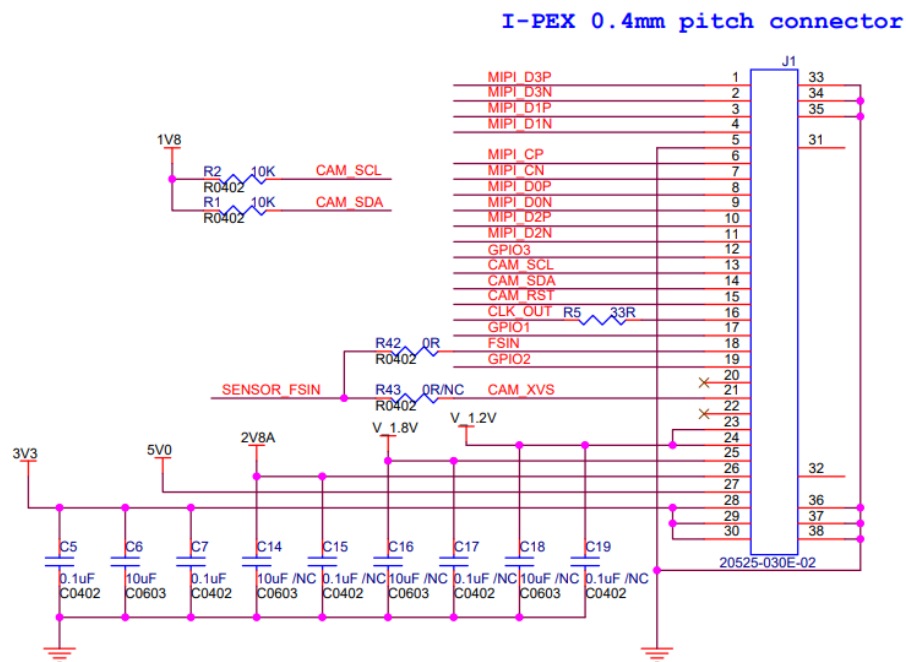
SYSTEM BLOCK DIAGRAM

(I2C: 0x6C 8-bit)



INTERFACE J1

- Connector Part#: 20525-030E-02
- Number of Positions: 30
- Pitch: 0.4 mm
- Mating I-PEX Cable: FAW-1233-03
- Sensor I2C Address: 0X6C (8-bit)
- External Power Supply: 3.3V



PINOUT DETAILS OF J1

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI_D3P	OUTPUT	MIPI Clock Data3 Differential Pair +	1.8V
2	MIPI_D3N	OUTPUT	MIPI Clock Data3 Differential Pair -	1.8V
3	MIPI_D1P	OUTPUT	MIPI Clock Data1 Differential Pair +	1.8V
4	MIPI_D1N	OUTPUT	MIPI Clock Data1 Differential Pair -	1.8V
5	GND	POWER	Ground signal for digital and analog	-
6	MIPI_CP	OUTPUT	MIPI Clock Lane Differential Pair +	1.8V
7	MIPI_CN	OUTPUT	MIPI Clock Lane Differential Pair -	1.8V
8	MIPI_D0P	OUTPUT	MIPI Clock Data0 Differential Pair +	1.8V
9	MIPI_D0N	OUTPUT	MIPI Clock Data0 Differential Pair -	1.8V
10	MIPI_D2P	OUTPUT	MIPI Clock Data2 Differential Pair +	1.8V
11	MIPI_D2N	OUTPUT	MIPI Clock Data2 Differential Pair -	1.8V
12	GPIO3	INPUT	VSYNC signal	1.8V
13	CAM_SCL	INPUT	1.8V IO Camera I2C SCL signal with 3.2kΩ pull-up.	1.8V

Pin No	Signal Name	Pin Type	Description	Voltage Level
14	CAM_SDA	I/O	1.8V IO Camera I2C SDA signal with 3.2k Ω pull-up.	1.8V
15	CAM_RST	INPUT	1.8V IO Camera reset signal (Active Low)	1.8V
16	CLK_OUT	INPUT	Reserved CLK for camera	1.8V
17	GPIO1	INPUT	Camera GPIO1 (Reserved)	1.8V
18	FSIN	I/O	Frame sync input	1.8V
19	GPIO2	I/O	Camera fail state error flag (active low)	1.8V
20	-	-	-	-
21	CAM_XVS	I/O	Vertical sync signal (Reserved)	1.8V
22	-	-	-	-
23	V_1.2V	POWER	Not Used	-
24	V_1.2V	POWER	Not Used	-
25	V_1.8V	POWER	Not Used	-
26	2V8A	POWER	Not Used	-
27	5V0	POWER	Not Used	-
28	3V3	POWER	3.3V power supply	3.3V
29	3V3	POWER	3.3V power supply	3.3V
30	3V3	POWER	3.3V power supply	3.3V

● REVISION HISTORY

Revision	Description	Release Date
0.1	Initial draft.	27 Jun 2025
0.2	Updated pictures on the page 1 & 2.	24 Nov 2025

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